

13.3: Data and Analysis

Data Collection

(Acquiring competencies) Following your detailed protocol based on the videos, perform all the experiments. Record your observations and take pictures of your key steps in the process. Your observations and images need to be incorporated in your data section and this section should be as detailed as possible as you will use this information to complete your discussion.

Data Processing

1. (Existing knowledge, research, and views) Identify the main ingredient in chalk.
2. (Representation) Write the balanced chemical equation for the observed reaction between the chalk and the hydrochloric acid.
3. (Representation) Write the balanced chemical equation for the reaction that produced the calcium carbonate precipitate.
4. (Manipulation) Using the mass of the calcium carbonate precipitate, calculate the mass of the calcium ions in the crushed chalk. (Hint: You will need to use both balanced chemical equations.) Show all your work with the appropriate units.
5. (Manipulation) Using the mass of the calcium carbonate precipitate, calculate the mass of the calcium ions in the powdered chalk. (Hint: You will need to use both balanced chemical equations.) Show all your work with the appropriate units.
6. (Manipulation) Calculate the percent calcium in chalk.
7. (Assumptions and Analysis) Fill in the following table using the observations and data from your experiments.

Assumptions made	Testing the assumption	If assumptions are wrong ...
There is no calcium in hydrochloric acid.		

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